

What is claimed is:

1. A method for allocating cell ID codes in a mobile communication system of a cellular mode comprising:

generating ID codes using Hadamard codes; and

allocating the generated ID codes to cells which require ID codes.

2. The method of claim 1, wherein generating the ID codes either by deleting or puncturing first bits of the Hadamard codes.

3. The method of claim 1, wherein generating the ID codes either by deleting or puncturing first and second bits of the Hadamard codes.

4. The method of claim 1, wherein generating the ID codes by deleting first, second and sixth bits of the Hadamard codes.

5. The method of claim 1, further comprising:

selecting Hadamard codes in which the first bit of the second half of a code has a bit value of 0; and

generating the ID codes using the selected Hadamard codes.

6. The method of claim 5, wherein generating the ID codes either by deleting or puncturing first bits of the Hadamard codes.

7. The method of claim 5, wherein generating the ID codes either by deleting or puncturing first and second bits of the Hadamard codes.

8. The method of claim 5, wherein generating the ID codes by deleting first, second and sixth bits of the Hadamard codes.

9. The method of claim 1, wherein the Hadamard codes have code bit lengths of either 8 or 16.

10. A method for allocating cell ID codes in a mobile communication system of a cellular mode comprising:

selecting a first code having all bit values of 0; a second code alternately having bit values of 01, a third code repeatedly having bit values of 0011, a fourth code repeatedly having bit values of 0110, a fifth code repeatedly having bit values of 00001111, a sixth code repeatedly having bit values of 01011010, a seventh code alternately having bit values of 00 and 11, and an eighth code alternately having bit values of 01 and 10;

generating ID codes using the selected codes; and

allocating the generated ID codes to cells which require ID codes.

11. The method of claim 10, wherein generating the ID codes either by deleting or puncturing first bits of the selected codes.

12. The method of claim 10, wherein generating the ID codes either by deleting or puncturing first and second bits of the selected codes.

13. The method of claim 10, wherein generating the ID codes by deleting first, second and sixth bits of selected Hadamard codes.

14. The method of claim 10, wherein the selected codes have a code bit lengths of either 8 or 16.

15. A method for generating and transmitting optimal cell ID codes comprising:

generating, at a UE, cell ID codes based on at least one of Hadamard codes or bi-orthogonal codes during an SSDT;

respectively allocating the generated cell ID codes to active cells of the UE;

periodically measuring, at the UE, received levels of common pilots transmitted from the active cells to select a primary cell; and

periodically transmitting cell ID codes of the selected primary cell to the active cells.

16. The method of claim 15, wherein the cell ID codes allocated to the active cells of the UE are released simultaneously when the SSDT is released.

17. The method of claim 15, wherein generating the cell ID codes based on Hadamard codes.

18. The method of claim 17, wherein the cell ID codes are generated either by deleting or puncturing first bits of Hadamard codes having 8 bits or 16 bits, or the cell ID codes are generated either by deleting or puncturing first and second bits of Hadamard codes having 8 bits or 16 bits, depending on types and lengths of the cell ID codes to be generated.

19. The method of claim 18, wherein the generated cell ID codes are inserted into a FBI field of a slot in a frame by either 1 bit or 2 bits.

20. The method of claim 18, wherein the cell ID codes are generated by puncturing at least one bit of the Hadamard codes to transmit the cell ID codes by one frame.

21. The method of claim 18, wherein the cell ID codes generated by puncturing the first and second bits of the Hadamard codes are inserted into the FBI field by 2 bits.

22. The method of claim 21, wherein cell ID codes of 8 bits are inserted a predetermined number of times into the FBI field together with one of the cell ID codes generated by puncturing the first and second bits of the Hadamard codes of 8

bits.

23. The method of claim 21, wherein cell code of 16 bits is inserted into the FBI field together with one of the cell ID codes generated by puncturing the first and second bits of the Hadamard codes of 16 bits.

24. The method of claim 17, wherein the cell ID codes are generated by deleting the first bit of the Hadamard codes of 8 bits and by selectively puncturing two bits among the remaining 7 bits of Hadamard codes to generate cell ID codes having a code length of 5 bits.

25. A method of claim 15, wherein generating the cell ID codes based on both the Hadamard codes and bi-orthogonal codes.

26. The method of claim 25, wherein the cell ID codes are generated by deleting at least first bits of Hadamard codes of 8 bits or 16 bits.

27. The method of claim 25, wherein the cell ID codes are generated using bi-orthogonal codes of 8 bits or 16 bits.

28. The method of claim 25, wherein the cell ID codes are generated by deleting first and ninth bits of the Hadamard codes of 16 bits.

29. The method of claim 25, wherein one of the cell ID codes generated based on the bi-orthogonal codes and one of the cell ID codes generated based on the Hadamard codes are transmitted together in one frame.

30. A method of claim 15, wherein selecting the cell ID codes generated based on either the Hadamard codes or the bi-orthogonal codes, depending on the number of active cells in an active set of the UE; and allocating the selected cell ID codes to the active cells of the UE.

31. The method of claim 30, wherein selecting a cell ID code generated based on the bi-orthogonal codes, if the number of active cells in the active set is two or less.

32. The method of claim 31, wherein two cell ID codes generated based on the bi-orthogonal codes are orthogonal to each other.

33. The method of claim 31, wherein selecting and allocating cell ID codes generated based on the Hadamard codes to the active cells, if the number of active cells increases to a number greater than two.

34. The method of claim 30, wherein selecting a cell ID code generated based on the Hadamard codes, if the number of active

cells is greater than two.

35. The method of claim 34, wherein selecting and allocating cell ID codes generated based on the Bi-orthogonal codes to the active cells, if the number of active cells decreases to a number less than three.

36. A method for generating and transmitting optimal cell ID codes comprising:

allocating, at a UE, cell ID codes generated based on Hadamard codes during an SSDT to active cells in a active set of the UE;

periodically measuring, at the UE, received levels of common pilots transmitted from the active cells to select a primary cell; and

periodically transmitting, at the UE, cell ID codes allocated to the primary cell to the active cells through a FBI field of an uplink control channel.

37. A method for generating and transmitting optimal cell ID codes comprising:

generating, at a UE, a plurality of cell ID codes based on both Hadamard codes and bi-orthogonal codes during an SSDT;

allocating the generated cell ID codes to active cells in an active set of the UE;

periodically measuring, at the UE, received levels of common

pilots transmitted from the active cells to select a primary cell;

determining, at the UE, the number of bits which will be inserted into a FBI field of each slot, when the cell ID codes of the primary cell are transmitted to the active cells;

repeatedly inserting the cell ID codes of the primary cell by one or more number of times in a frame, depending on the cell ID code type; and

transmitting the cell ID codes to the active cells through an uplink control channel.

38. A method for generating and transmitting optimal cell identifier codes comprising:

selectively allocating, at a UE, one or more cell ID codes generated based on Hadamard codes or bi-orthogonal codes to active cells in an active set of the UE, depending on the number of active cells in the active set;

repeatedly inserting the cell ID codes of the primary cell one or more number of times in a frame; and

transmitting the cell ID codes to the active cells during the SSDT.